$$x(t) = \boxed{0.87 \cos(2\pi 441 t)}$$

$$= \cos\left(\frac{\pi}{6}\right) \cos(2\pi 441 t)$$

$$y(t) \boxed{= -0.5 \sin(2\pi 441 t)}$$

$$= -0.5 \cos\left(2\pi 441 t - \frac{\pi}{2}\right)$$

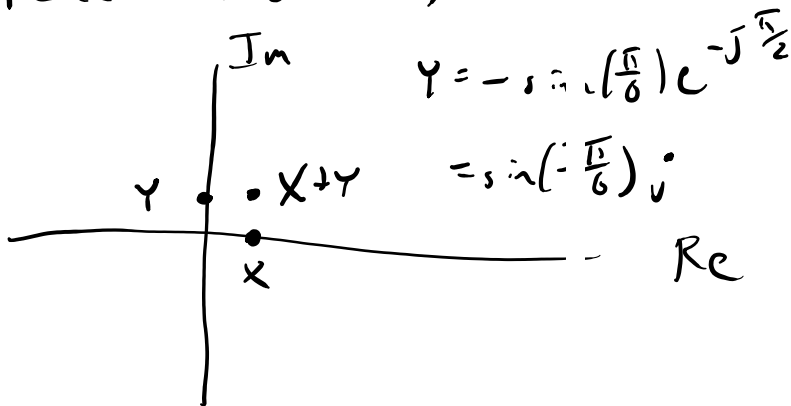$$= -\sin\left(\frac{\pi}{6}\right) \cos\left(2\pi 441 t - \frac{\pi}{2}\right)$$

$$x(t) = Re\left(\cos\left(\frac{\pi}{6}\right) e^{j 2\pi f t}\right) = Re\left(\underline{X} e^{j 2\pi f t}\right)$$

$$(t) = Re\left(-\sin\left(\frac{\pi}{6}\right) e^{j\left(2\pi f t - \frac{\pi}{2}\right)}\right) = Re\left(\underline{Y} e^{j 2\pi f t}\right)$$

$$y(t) = Re\left(\cdots \right)$$

$$X + Y = \cos\left(\frac{\pi}{6}\right) - \sin\left(\frac{\pi}{6}\right) e^{-j \frac{\pi}{2}}$$

$$z(t) = Re\left((X+Y) e^{j 2\pi f t}\right)$$

$$Y = -\sin\left(\frac{\pi}{6}\right) e^{-j\frac{\pi}{2}}$$

$$= \sin\left(-\frac{\pi}{6}\right) j$$

$$X + Y$$

$$\underbrace{\overset{\frown}{\quad}}_{x}{}^{)^{T}}$$

$$|x+y| = \sqrt{|x|^2 + |y|^2}$$

$$= \sqrt{\cos^2\left(\frac{\pi}{6}\right) + \sin^2\left(\frac{\pi}{6}\right)} = 1$$

$$\angle(x+y) = \tan^{-1}\left(\frac{\sin\left(\pi/6\right)}{\cos\left(\pi/6\right)}\right) = \frac{\pi}{6}$$

$$z(t) = \text{Re}\left((x+y)\, e^{j2\pi ft}\right)$$

$$= \text{Re}\left(e^{j\pi/6}\, e^{j2\pi ft}\right)$$

$$= \cos\left(2\pi ft + \frac{\pi}{6}\right)$$